

Introduction to Species Accounts

Overview

The following species accounts contain information we think the reader needs when planning conservation actions that may affect Priority bird species. We picture a resource manager or decision-maker consulting these species accounts with a particular project or management area in mind, which may involve habitat enhancements, restoration actions, weed control, grazing plans, recreation plans, energy projects, development of infrastructure, or anything else that may affect the birds that live in a particular area. For projects designed to benefit many different bird species simultaneously, **we recommend first consulting the habitat accounts for the major habitat types that are present in the project area.** The habitat accounts have a list of the Priority bird species that are characteristic of each habitat type, and they describe habitat-specific conservation strategies that benefit these Priority species and the bird community as a whole. Conservation strategies presented within the species accounts are designed to be consistent with strategies presented in the habitat accounts, but they are typically more detailed and species-specific, particularly with regard to needed research and monitoring actions. All users can benefit from reviewing the species accounts, but they will be most critical for those that have a special interest in one species or a small number of species. The species accounts are structured using a uniform layout, which makes it easier for users to locate the information they need.

Layout

We chose to present the most critical information about each Priority species in summary tabular format on the first page of each species account. Only information that we considered critical to conservation planning was included on this page. This table page for each species account includes:

- 1) A **Conservation Profile** that characterizes the level of urgency for conservation action
- 2) A **Habitat Use Profile** that details the key habitat features that the species is known or likely to require in Nevada
- 3) A **Natural History Profile** that summarizes a few critical ecological and life history parameters

Because space is limited on most table pages, sources of information are indicated in the form of footnote superscripts, and the corresponding footnote key containing brief citation information (author and year) appears at the end of each account. For consistency, the footnote citation format necessitated by the table page is retained throughout the species accounts. Full citations are available in the *Literature Cited* section. The **abbreviation “EO” (= expert opinion) is used where important information was not available in the published literature and we relied on overwhelming expert opinion** from reviewers, members of the planning group, and other bird conservation professionals.

We also provide **confidence rankings** for key habitat parameters, historical and recent trends, population size estimates, and range maps, using symbols that are explained in the footer section of the first page. These subjective rankings represent the degree of confidence we have in a given piece of information. “High” confidence means we are almost certain that the information is

Introduction to Species Accounts

reasonably accurate. “Low” confidence means that we regard the information as either incomplete or somewhat conjectural. “Moderate”, which is the most commonly applied ranking, indicates an intermediate level of confidence.

On the following pages of each account, we present:

- 1) A summary of distribution and seasonal presence in the form of a **range map** (see pp. App-1:18-19, for details). Our knowledge of true distributions varies greatly among species, which we indicated with a confidence ranking on each species map
- 2) An **Overview** summarizing the key factors about each bird’s conservation issues
- 3) Quantitative data on **abundance and occupancy by habitat** and **Nevada-specific studies and analyses**, where available (see pp. App-1:13-14 for details)
- 4) A list of the **Main Threats and Challenges** for the species in Nevada
- 5) **Conservation Strategies** that represent our best knowledge of the most actions that will most effectively preserve the species in Nevada

In the remainder of this chapter, we provide important definitions, sources of information, methods, and recommended uses regarding the specific information presented in each species account.



Trumpeter Swans. Photo by Martin Meyers

Introduction to Species Accounts

Conservation Profile

Priority Status: Identifies whether the species is a Conservation Priority, Stewardship, or Special Status Species (see pp. Birds of Nevada 1-2; App-1:1-2; and *Appendix 2* for details). Generally, we recommend treating all three types of Priority birds as categories with equal conservation concern.

Species Concerns: This is a summary of the main concerns that led to conservation ranking of the species by regional initiatives, which was the basis for species inclusion in this plan. Concerns may include:

- 1) Known or likely declines in populations, either in historical times or more recently
- 2) Restricted species distributions or small population sizes
- 3) Dependence on threatened or restricted habitat type(s)
- 4) Known or likely habitat threats
- 5) Listed as threatened or endangered under Endangered Species Act (ESA), or a candidate for listing
- 6) High stewardship responsibility due to a significant portion of the species' global population being present in Nevada

Other Rankings: This item provides rankings by regional conservation initiatives and government agencies with significant responsibilities for bird conservation. For more details on these rankings, please consult the sources listed here:

- 1) *Partners in Flight Continental Plan (PIF)*: http://www.partnersinflight.org/cont_plan/
- 2) *Audubon Watchlist*: <http://birds.audubon.org/species-by-program/watchlist>
- 3) *Nevada Natural Heritage Program's state rankings*: <http://heritage.nv.gov/spelists.htm>
- 4) *U.S. Fish and Wildlife Service's rankings under the ESA*:
<http://www.fws.gov/endangered/species/us-species.html>
- 5) *U.S. Fish and Wildlife Service Birds of Conservation Concern*:
http://library.fws.gov/Bird_Publications/BCC2008.pdf
- 6) *U.S. Fish and Wildlife Service's ranking under the Migratory Bird Treaty Act*:
<http://www.fws.gov/migratorybirds/RegulationsPolicies/mbta/mbtintro.html>
- 7) *U.S. Bureau of Land Management*: Internal "Sensitive Species" list.
http://www.blm.gov/nv/st/en/info/state_directory.html
- 8) *U.S. Forest Service*: Internal Humboldt-Toiyabe Forest "Sensitive Species" list
<http://www.fs.fed.us/r4/resources/wildlife/index.shtml>
- 9) *Nevada Department of Wildlife / Nevada Wildlife Action Plan*:
<http://www.ndow.org/wild/conservation/cwcs/>
- 10) *Intermountain West Shorebird Conservation Plan*:
<http://www.fws.gov/shorebirdplan/RegionalShorebird/downloads/IMWEST4.doc>
- 11) *Intermountain West Waterbird Conservation Plan*:
<http://www.pwrc.usgs.gov/nacwcp/pdfs/regional/MainTextV12nocover.pdf>
- 12) *Pacific Flyway Council (various documents)*:
<http://www.pacificflyway.gov/Management.asp>
- 13) Various habitat conservation plans, as cited in individual accounts

Introduction to Species Accounts

Trends: This section lists historical (pre-1970s) and recent (post-1970) population trends to the best of current knowledge. Population trends were obtained from analyses of BBS data (Sauer et al. 2008), regional bird conservation initiatives, *Birds of North America* species accounts (Poole and Gill 1992-2002, <http://bna.birds.cornell.edu/bna/>), and other published sources. Wherever possible, we focus on Nevada-specific trends, but in many cases (as noted in the species accounts), we were forced to rely on regional trends due to lack of information in Nevada.

Population Size Estimate: Nevada population size estimates for most landbirds were obtained from NBC data analyses, or alternately from an unpublished analysis of BBS data (Rich et al. 2004) (for details see pp. App-1:14-18, and *Appendix 4*). These sources are indicated parenthetically in the table, either (NBC) or (BBS). For shorebirds, waterbirds, waterfowl, and marshbirds, population estimates were obtained from regional management plans (Ivey and Herziger 2006, Oring et al. 2000), from survey data collected by Larry Neel of the Nevada Department of Wildlife, or from other published sources. Population estimates for remaining species groups (some owls, raptors, hummingbirds) were obtained from various published sources, or in some cases were simply not available. For global population size estimates, we consulted national and continental conservation plans by the major bird conservation initiatives, as indicated in the citations.

Population Objective: The entry identifies how much change in population trend is needed to achieve the desired conservation status. The objectives were largely based on continental objectives of the major bird conservation initiatives, as indicated in the citations, but in some cases the objectives were amended by expert opinion based on Nevada-specific considerations.

Monitoring Coverage: Here, we list the Nevada programs (Source) under which the species is currently monitored, and our opinion of how adequately the species is surveyed by these monitoring efforts (Coverage in NV). In cases where Coverage in Nevada is ranked “Fair” or “Poor”, additional monitoring efforts are needed.

Key Conservation Areas: This section lists the general regions, valleys, mountain ranges, or habitat types in which we estimate that conservation action will be most effective. It is divided into Protection, which refers to species stronghold areas that need continuing or expanded protection, and Restoration, which refers to areas where population could be increased if restoration actions were undertaken. This table entry does not necessarily represent *all* worthy Protection or Restoration areas in Nevada; rather it simply provides our recommendations of areas, in which conservation action may be most effective.

Habitat Use Profile

Habitats Used in Nevada: This section allows the user to quickly determine the **habitat accounts** that are relevant to the species. It lists all major habitat types (as defined on pp. App-1:7-12) regularly used by the species in Nevada, roughly in order of importance. Habitat types shown in parentheses are used less regularly, or more locally, than the others. In all cases, we recommend that these habitat accounts be used in tandem with the species accounts, as they cover opportunities for habitat conservation that benefits multiple species.

Introduction to Species Accounts

Key Habitat Use Parameters: This section identifies the key habitat features needed by the species. Many subcategories are used for various species, which cover plant species composition, plant density and structure, landscape mosaic (i.e. mixtures of different habitat types or resources over large areas), and other parameters. We only list those habitat features that may be affected by threats, and that a resource manager can potentially address through conservation action. Habitat features that cannot be influenced by management actions are generally excluded.

Area Requirements: This section lists estimated **area requirements for effective conservation**, including minimum patch size (if known), recommended patch size for maintaining a sustainable population, and territory and/or home range sizes. In all cases, we would refer conservation planners to the **recommended patch size**, as this is the minimum area that we estimate is needed to maintain a functional *population*, rather than just individual birds.

Natural History Profile

Seasonal Presence in Nevada: This section identifies the seasons during which the bird is primarily present in Nevada. Migrant populations are only mentioned if Nevada is known to provide significant stopover habitat for a species, if migrants have a notable presence in an area of the state where they are otherwise absent, or if some particular conservation concern is associated with migrant populations. In some cases, this entry is subdivided to refer to different regions of the state (for instance, a bird may have only a breeding presence in northern Nevada, but may be present year-round in southern Nevada). We frequently consulted eBird (www.ebird.org) to fine-tune our understanding of seasonal presence in Nevada.

Known Breeding Dates in Nevada: Breeding phenologies were derived largely from the Nevada Breeding Bird Atlas project, supplemented by published sources and by expert opinion from the planning group. The range of dates broadly describes the **complete breeding season**, including mating, nest building, incubation, and brood-rearing.

Nesting Habits: This section describes the species' habits for nest placement and site fidelity. **Nest Placement** refers to microsite requirements (e.g., dense shrub branches, tall tree, or vicinity to wetland edge) that need to be provided for successful nesting and brood rearing. **Site Fidelity** describes in simple categorical terms how rigid individuals are in terms of re-using their nest site, breeding territory, or habitat patch location over multiple years. This information is useful for land managers who need to estimate how likely a species is to use alternate habitat or colonize a newly-restored habitat patch. For non-breeding birds, Site Fidelity is sometimes used to indicate the likelihood of repeated annual use of key wintering or migratory stopover sites.

Food Requirements: This section describes the mode by which a bird gathers food (Basic), the food items most important to the species (Primary Diet), and the most common alternate or seasonal food items (Secondary Diet). This information is particularly relevant for species such as the Golden Eagle, where many conservation goals can be accomplished by managing for healthy prey populations.

Introduction to Species Accounts

Range Map

The range maps were carefully designed to represent our best knowledge of the current distributions of birds in Nevada. They represent a compromise between simply reporting known locations as dots on a map, and the most inclusive approach of field guides that block out wide regions to indicate a range. Here, we settled on an intermediate approach, which – in most cases – provides us with sufficient resolution to **describe a species' distribution accurately without underestimating the extent of its range based on spotty survey coverage**. Details on map construction and data sources are covered on pp. App-1:18-19, and readers with an interest in the range maps are encouraged to review this section carefully.



Rufous Hummingbird. Photo by Jacque Lowery

It is important to note that the maps are only reliable within the bounds set by their intrinsic mapping scale (whole basin or range, whole waterbodies). This means that **a species will not necessarily be present at all locations within areas that are highlighted as known range**. At these finer scales, the maps are only useful to indicate that a species *may* be present in a particular site, but **will almost certainly be absent in inappropriate habitat types** (e.g., a riparian associated species will only occur in riparian patches in the indicated region). Likewise, it should not be assumed that a bird is *necessarily* absent in all areas not highlighted in the map (see confidence ranking).

As described on pp. App-1:18-19, the basic mapping units for landbirds are **whole mountain ranges or basins**, for waterbirds, waterfowl, shorebirds, and marshbirds **major waterbodies, marsh complexes, and rivers**, and for ephemeral wetland species, **waterbodies and playas**. In the case of a few very rare landbirds, however, we departed from the basin and mountain range

Introduction to Species Accounts

scheme because it over-represented the very limited geographical range of these rare species. The mapping units used for these birds are explained in the footnotes.

On the range maps, different colors are associated with different seasonal periods, as indicated on the map legends. **Solid, dark** versions of these colors indicate areas where **presence has been confirmed by data**. **Paler, semi-transparent** versions of these same colors indicate the broader areas in which **we expect the species to occur within suitable habitat types**, although we had no data to confirm it.

Determining when and how to illustrate a species' migratory presence in the state was difficult. On the one hand, all of Nevada's birds that are not year-round residents have a migratory presence, but attempting to plot this distinctly on the maps would have been difficult, and would have distracted from more important map elements. We therefore decided to **combine migratory and winter range for most birds**. In part, this decision was based on the fact that many of Nevada's breeding birds that migrate south for the winter maintain small (and usually poorly-documented) wintering populations in southern Nevada. Where it was possible or important to clearly distinguish between migratory and winter range, we do so. We also chose to highlight migratory range for some species that are primarily or exclusively present in the state during their migratory stopovers.

Finally, we note that the range maps were prepared and included in this plan not only to illustrate our current knowledge, but also to encourage managers, researchers, and birders to focus their survey efforts in areas where our knowledge of distributions may be inadequate. **We encourage submissions of verified sightings to GBBO that can be used to improve these maps** (see pp. Introduction, 5-6).

Overview Section

The Overview section summarizes issues of conservation interest for each species, along with any important information that does not fit well into the tables on the first page. It characterizes the key issues relevant for managing the species, but does not repeat in detail the information listed in the tables on the first page of the account.

Abundance and Occupancy by Habitat

For landbirds that are well-sampled by the Nevada Bird Count (NBC), this section includes our estimates of **habitat-specific densities**, as described in detail on p. App-1-14. In some cases, we report densities for birds that were not well-surveyed by NBC based on other sources.

Nevada-Specific Studies and Analyses

This section focuses primarily on statistical analyses of **bird-habitat relationships in Nevada**. Most of these analyses were based on datasets derived from NBC and GIS habitat maps, as described in detail on p. App-1-13. In some cases, analyses from other datasets were available in the published literature. We present only statistical analyses based on Nevada data, or from data that are clearly relevant to Nevada.

Introduction to Species Accounts

Main Threats and Challenges

This section lists the specific threats and management challenges that apply to the species, based on published literature and the deliberation and review of experts in the planning group. We focus only on threats that are known or likely to apply in Nevada, and further on threats that can be influenced by management actions. We distinguish between habitat-based threats and challenges presented by lack of adequate monitoring, research, or planning.

Conservation Strategies

Conservation strategies are in many ways the most important output of this plan. They were developed collaboratively by the planning group during a series of meetings and review cycles, and were informed by numerous published sources and agency reports. As described in the *Introduction* (pp. 2-3), we stress habitat-based strategies, along with strategies that call for gathering more conservation data through research and monitoring. We do not attempt to prescribe strategies that would usurp the interagency planning process, nor strategies involving political action or advocacy. Conservation strategies were categorized as follows:

Established Strategies: For some species, successful conservation strategies have already been developed to meet regulatory requirements, or have been successfully implemented by previous conservation plans. We highlight the most important elements of these established strategies, and refer the reader to the original sources for further detail.

Habitat Strategies: These include strategies for management, protection, or restoration of habitat. We used the Habitat Use and Natural History Profile tables from the first page of each account to derive a vision for desired habitat conditions for the species, and then determined the strategies needed to achieve this vision in the face of known and likely habitat threats.

Research, Planning, and Monitoring Strategies: For many species, we need to gather more information about threats, trends, status, distribution, habitat requirements, or basic biology in order to identify the most effective approaches to conservation. Collecting this information may require additional research studies, planning activities, or monitoring efforts. We tended not to focus much on future planning in this section, but planning strategies are discussed in greater depth in the habitat accounts.

Public Outreach Strategies: These strategies involve educating the public, seeking to increase public support for conservation objectives, or conducting outreach to modify public activities.

Log of Changes

The online version of this plan, maintained at www.gbbo.org/bird_conservation_plan.html, will include a Log of Changes section for each species account that will list all changes and additions associated with each revision of the species account. This log will enable a user to quickly determine whether or not a more recent version of a given species account contains information that is of interest.